

Applic. No.: 10/637,191
Amdt. Dated July 29, 2005
Reply to Office action of May 5, 2005

REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 1-12 remain in the application. Claims 1, 8, 10, and 12 have been amended.

In item 1 on page 2 of the above-identified Office action, claim 8 has been rejected as being indefinite under 35 U.S.C. § 112, second paragraph.

More specifically, the Examiner has stated that the claim recites "a conductivity" which is not clear whether it is thermal conductivity or electrical conductivity.

The wording "a conductivity" has been changed to "an electrical conductivity."

It is accordingly believed that the claims meet the requirements of 35 U.S.C. § 112, second paragraph. Should the Examiner find any further objectionable items, counsel would appreciate a telephone call during which the matter may be resolved. The above-noted changes to the claims are provided solely for cosmetic and/or clarificatory reasons. The changes are neither provided for overcoming the prior art nor do they

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narrow the scope of the claims for any reason related to the statutory requirements for a patent.

In item 2 on pages 2-4 of the above-mentioned Office action, claims 1-10 and 12 have been rejected as being anticipated by Choquette et al. (US 5,493,577) under 35 U.S.C. § 102(b).

In item 3 on page 4 of the above-mentioned Office action, claim 11 has been rejected as being unpatentable over Choquette et al. in view of Jewell (US 5,719,891) under 35 U.S.C. § 103(a).

The rejection has been noted and claim 1 has been amended in an effort to even more clearly define the invention of the instant application. Support for the changes is found in the figure and the corresponding description in the specification.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, inter alia:

mode-selective regions extending in a vertical direction within said vertical resonator and laterally delimit said vertical resonator.

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The invention of the instant application relates to a semiconductor laser in which a mode-selective region (13) is disposed within a vertical resonator. The vertical resonator is formed by two reflectors (3, 5), which delimit the vertical resonator. "Within the vertical resonator" means that the mode-selective region is disposed directly between the two reflectors.

In contrast, Choquette et al. describe a semiconductor laser in which an insulation layer 38, which is identified by the Examiner as a mode-selective region, is disposed outside of the resonator.

The fact that the insulation layer 38 is disposed outside of the resonator is clearly shown in Fig. 1 in connection with column 5, lines 26-28 of Choquette et al. The text in column 5, lines 26-28 of Choquette et al. reads: "An insulation layer 38 may be provided to protect the etched mesa, and to provide support for the upper electrode 22." As can be seen in Fig. 1, the insulation layer 38 encloses the mesa laterally. A second Bragg-reflector 16 is disposed inside the mesa. Consequently, the insulation layer 38 is located outside of the vertical resonator formed by the first reflector 14 and the second reflector 16. In other words, the insulation layer is not disposed directly between the two reflectors.

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Clearly, Choquette et al. do not show "mode-selective regions extending in a vertical direction within said vertical resonator and laterally delimit said vertical resonator," as recited in claim 1 of the instant application.

Claim 1 is, therefore, believed to be patentable over Choquette et al. and since all of the dependent claims are ultimately dependent on claim 1, they are believed to be patentable as well.

In addition, with regard to claim 9 of the instant application, the text (column 13, line 62 to column 14, line 2 of Choquette et al.) referred to by the Examiner only describes that an ion implantation of the second reflector would be disadvantageous ("By placing the control layer adjacent to the active region in the first embodiment of the invention in FIG. 1, the electrical current (as shown schematically by the dashed lines in FIGS. 1 to 4) may flow more freely through the device 10 than would be possible if the entire second mirror stack were constricted (for example, by oxidized portions of each mirror period, or by ion implantation throughout) for current channeling.")

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Therefore, it is not disclosed by Choquette et al. that the mode-selective regions are formed by implanted regions.

Rather, the implanted regions are described as disadvantageous because they strongly constrict the current flow. In fact, the text referred to by the Examiner teaches away from the subject matter of claim 9 of the instant application.

Further, an implanted mode-selective region would contradict the Examiner's opinion that the insulation layer 38 forms the mode-selective region. According to column 5, lines 25-29 of Choquette et al., the insulation layer is applied on the formed mesa. It makes no sense for a person skilled in the art to additionally implant such an insulation layer with ions because the implantation serves, among others, to reduce the conductivity and an insulation layer is already not electrically conductive.

With regard to claim 12 of the instant application, the language of claim 12 has been modified to recite that the mode-selective regions are formed within the multilayer structure. In contrast, Choquette et al. only describe that the insulation layer 38 is applied laterally on the mesa, which contains a multilayer structure. Choquette et al. can, therefore, not suggest that the mode-selective region is disposed within the multilayer structure.

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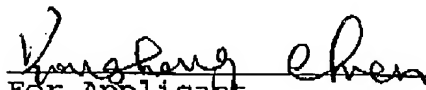
In view of the foregoing, reconsideration and allowance of claims 1-12 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate a telephone call so that, if possible, patentable language can be worked out.

If an extension of time for this paper is required, petition for extension is herewith made. Please charge any fees which might be due with respect to 37 CFR Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,

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For Applicant

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